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Project Research into Expressway
Development "Neighbourhood
Attitudes study on the proposed
North South Corridor Expressway".

Dear Sir or Madam,

Enclosed is a copy of PROJECT R.E.D.'s report into the proposed Red Hill Creek Valley Expressway. We would like to thank you for any assistance that you have given us.

If you would prefer only a brief overview of the report, the Results in section 3.3, indicating the frequency of responses found in the data, and the Summary and Conclusions in section 3.4 and 4 would provide you with this.

Feel free to contact us if you have any questions.

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or the McQuesten Community Association

We hope that you will consider this report in any decisions on your behalf.

Yours Sincerely,

The staff of PROJECT R.E.D.

PROJECT R.E.D.
(Research into Expressway Development)

**A NEIGHBOURHOOD ATTITUDE STUDY ON THE
PROPOSED NORTH-SOUTH CORRIDOR EXPRESSWAY**

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1. INTRODUCTION

1.1 PROJECT GOAL

The primary goal of this study was to provide well-documented and accurate data on any proposed North-South Corridor Expressway development from a citizen's viewpoint.

1.2 HISTORY OF THE PROPOSAL

The need for a mountain freeway using a route down the Red Hill Creek Valley in Hamilton's east end, first appeared in 1951 through a study conducted by Wilbur Smith and Associates. Again in 1963, a regional transportation study by C.C. Parker and Associates suggested a North-South Expressway route using the Red Hill Creek Valley and then East-West across the mountain.

In the years to follow there has been great controversy over the environmental and social impacts of a corridor expressway through the valley. Furthermore, there has been the question as to the actual need of a North-South Expressway such that the proposal has been brought up and dropped several times.

In May 1979, six recommended routes were presented and the issue again stands at the point of acceptance or rejection.¹

1.3 RATIONALE FOR THE PROJECT

Project R.E.D. (Research into Expressway Development) was a Young Canada Works Project sponsored by the McQuesten Community Association which took place between May 22 and September 7, 1979.

¹ The Hamilton Spectator, July 7, 1979, Pg. 57

Its main purpose was to gather and analyze data from a public opinion survey on the proposed North-South Corridor Expressway in the east end of Hamilton.

The Project was initiated in December of 1978 by the McQuesten Community Association, which was aware of the forthcoming expressway proposals, but which felt that the public was not contributing enough to the decision making process. This project was thus an attempt to fill that gap.

1.4 FUNDING

Formal application was made to Young Canada Works and a grant of \$13,626 dollars was awarded to fund the project. With the aid of Mr. David Mitchell (Community Service Co-ordinator of McQuesten Legal and Community Services) an Advisory Board for the project was set up consisting of the following members:

Peter Ciarroni.....	McQuesten Community Association
Clarke Wilson.....	Rosedale Community Council
Lenny Martin.....	Vincent Community Council
John Taylor.....	Kentley Community Council
Garnet Gervais.....	Upper Ottawa Street Anti-Pollution Committee
Dr. Martin Taylor.....	McMaster University, Department of Geography
Leonard Simser.....	Royal Botanical Gardens
Gary Hesson.....	Sir Winston Churchill Recreation Centre
Shirley Collins.....	McQuesten Community Association
Fred Lombardo.....	Ward 5 Alderman
David Mitchell.....	McQuesten Legal and Community Services

Edgar Smee.....Clear Hamilton of Pollution

Richard Leppert.....Clear Hamilton of Pollution

and the following agencies in advisory capacities:

G.R.A. Coffin.....Niagara Escarpment Commission

B.W. Vanderbrug.....Hamilton Region Conservation
Authority

I.G. Simmonds.....Ministry of the Environment

H. Schweinbenz.....Regional Engineering Department

Dale Turvey.....DeLeuw Cather

Janet Planck.....Ecologistics Ltd.

1.5 STRUCTURE

The study was then carried out by an independent group of university students and the data was obtained through door-to-door interviews using a questionnaire devised by the students.

The project began with the formulation of a proposal, followed by designing the questionnaire and the sample, as well as doing some background research into the expressway proposal. The majority of the work term was attributed to gathering interviews. Finally, the data was analyzed and the report compiled. The completed report was then distributed to pertinent people within the region of Hamilton-Wentworth.

1.6 ACKNOWLEDGEMENTS

The staff of Project R.E.D. would like to respectfully acknowledge the assistance of the following people who provided much needed and welcome advice and information throughout the project.

Mr. David Mitchell of McQuesten Legal and Community Services who guided us throughout the length of the project.

Dr. Martin Taylor of McMaster University (Department of Geography) who provided assistance in the design of the questionnaire, sample and analysis of the data.

Miss Cathy Cody of Young Canada Works who helped us with the administrative affairs.

Ms. Janet Planck of Ecologistics who provided information and advised us on matters pertaining to the environmental aspects.

2. METHODOLOGY

2.1 SAMPLE DESIGN

The communities which were considered to warrant inclusion in the sample are listed in Table 1. Most of these neighbourhoods were located either abreast to or within 500 metres of the Red Hill Creek Valley and were thought to be the ones most directly affected by the proposed expressway. The communities of Nashdale, Lower King's Forest and Upper King's Forest were eliminated due to an insignificant number of households in these areas. Communities on the mountain were also included in the sample so as to include possible commuters using the North-South Corridor Expressway.

The population of these 16 communities was estimated to be 42,000 and a sample size of 413 people was drawn. It was decided that the sample should be approximately proportional by neighbourhood population as well as by the distance zone's populations.

This design allowed:

1. Straight forward generalization to overall neighbourhood reactions.
2. Between neighbourhood comparisons ignoring distance zones.
3. Restricted neighbourhood comparisons including distance zones.
4. Between distance zone comparisons ignoring neighbourhoods.

Thus where applicable, each community was divided into distance zones (less the 200 metres, 200-400 metres, and greater than 400 metres from the valley) and each community as well as each distance zone had approximately an equal proportion of its population randomly selected for interviews.

The selection tool used for the random sample was a "Random Number Table" in Carl Babbie's The Practice of Social Research.

A contingency sample was also selected to be used as a replacement for those people who refused to be interviewed. This separate sample was derived similar to the original sample though only 35 per cent of its size. Again, it was approximately proportional by neighbourhood and distance zone.

In addition, a control sample of 199 households was selected from the Hamilton area using random numbers as previously outlined. This consisted of a non-proportional selection of households from eight previously selected regions in Hamilton as listed in Table 2.

2.2 QUESTIONNAIRE DESIGN

The first draft of the questionnaire was completed and the pretesting commenced. Each interview was approximately one half hour in length and a total of 23 interviews were completed. In addition, a copy of the questionnaire was mailed to those on the project's advisory committee and those with technical expertise in the field.

Several valuable comments and ideas were contributed by Dr. Martin Taylor (McMaster University), Janet Planck (Ecologistics Ltd.) and Dale Turvey (DeLeuw Cather).

The following is a brief outline of the pretest questionnaire and the changes that were necessary to arrive at the final questionnaire.

2.2.1 NEIGHBOURHOOD SATISFACTION

It was thought best to begin the interview with general

questions pertaining to neighbourhood satisfaction thereby gaining a good rapport between the respondent and interviewer. This included a series of questions asking the respondent to list the things he liked or disliked about his neighbourhood. The respondent was then asked to state on a seven point semantic differential scale his general satisfaction with the neighbourhood in which he lived.

Such semantic scales as the one previously mentioned, as well as lists of items and categories to be used in other questions, were presented to the respondent on cards where applicable throughout the interview.

2.2.2 AWARENESS OF ISSUE

The next series of questions required the respondent to state his awareness of the expressway issue. These included: awareness of the expressway proposal, familiarity with the various alternatives, the need for an expressway, preference for rapid transit vs. a roadway, whether enough information has been released to the public and community group involvement.

The wording was changed on a few of these questions to ensure clarity.

The question asking one's familiarity with the six roadway alternatives was changed from a seven point bi-polar scale to a yes-no response in order to help simplify the questionnaire. In addition, repetitious questions and those not directly related to the issue were eliminated. Specifically, these included the sources in which the respondent kept himself informed on the

expressway issue and his awareness of any community interest or action groups in the neighbourhood. The degree of accessibility to these community groups was eliminated for simplicity purposes also.

At this point in the questionnaire, the maps showing the six roadway alternatives were shown to the respondent and if necessary explained. First, he was required to describe his feelings towards each route, again on a semantic scale.

He was then asked to state his first and second preferences for a route, or if desired, an alternative solution other than the six selected by the region. The preceding questions provided a general attitude towards the selected routes as well as offering the respondent the opportunity of suggesting his own solution, if any.

2.2.3 SOCIAL IMPACT

With the aid of a community map indicating the location of the expressway in their neighbourhood, the respondent was then asked to rate the effect he thought the expressway would have on the neighbourhood. The question covered a broad area, specifically, the effect on residential traffic, property values, personal safety, noise levels, accessibility and visual appearance of the neighbourhood to name only a few. This again, brought out the general attitude of the respondents by stating what they perceived would be the effect, if any, of an expressway close to their neighbourhood. Again, with the use of the seven point semantic differential scale, the degree to which the residents would be

affected could be indicated.

With respect to the location of the respondent's household to the freeway, the perceived effects to the occupants on privacy, safety and use of the backyard were asked. On the suggestion given by Janet Planck, expected noise levels of traffic and trucks using the expressway was added. In addition, had he taken any actions in response to the expressway proposal, namely written to a newspaper, signed a petition or contacted a politician. Finally would the respondent consider moving to another neighbourhood if the proposed expressway were constructed. The effect, if any, of lights at night from a North-South Corridor Expressway on the household was eliminated, again due to a poor response rate in the pretest questionnaire.

2.2.4 USE OF THE VALLEY

In order to find information on the use of the Red Hill Creek Valley and whether a roadway would seriously affect the usage of the valley, a number of questions pertaining to recreation in the valley were included. The respondents were also asked whether they thought the valley, as it stands, should be further developed as an area for recreation and if so, how. Appendix B looks at the recreational use of the valley in more detail.

2.2.5 ENVIRONMENTAL IMPACT

Several questions on the natural environment of the Red Hill Creek Valley and the effects, if any, the respondent thought an expressway might have were also included. The questions asking the effects of an expressway on erosion in the valley was eliminated

due to its relatively poor response rate found in the pretest questionnaire. Whether the valley should be maintained as a place for plants, birds and animals to live was also deleted due to its elementary based nature. It was hoped by asking the preceding questions on recreation usage and the environment of the Red Hill Creek Valley, any indication as to whether the valley is of any importance to the people would result.

Finally, the respondent was asked what type of design or construction, if any, he felt should be used to reduce visual intrusion, noise, loss of recreational/open space and environmental damage that could possibly result from an expressway. This allowed the respondent to verbally express his views on how he thought an expressway should best be built to maximize his neighbourhood's satisfaction.

2.2.6 SOCIAL-DEMOGRAPHIC FACTORS

To conclude the questionnaire, several personal questions were asked of the respondent, namely, sex, level of education, age, marital status, children living at home, occupation and its relation to trucking or transportation, income, tenancy status and length of residence. As a result, a statistical cross-section of people interviewed was able to be obtained. In addition, possible relationships, if any, towards characteristics of the respondents and attitudes towards a North-South Corridor Expressway could be found and analyzed.

2.3 CONTROL QUESTIONNAIRE

A telephone interview was also devised to serve as the

control questionnaire. It consisted of six questions taken from the original questionnaire.

Briefly, the respondent was asked whether he was aware of the North-South Corridor Expressway, the need for a transportation route in east Hamilton, his familiarity with the six roadway alternatives, and which one, if any, he prefers and finally, whether he thought enough information had been released to the public about the expressway proposal. As suggested by Dale Turvey, it was used simply to obtain attitudes towards the expressway from the greater part of Hamilton.

TABLE 1SAMPLE OF COMMUNITIES

<u>VALLEY AREAS</u>	<u>TOTAL</u>	<u>DISTANCE ZONES</u> *		
		<u>200 M.</u>	<u>200-400 M.</u>	<u>400 M.</u>
Albion Falls	1			
Corman	28	2	6	20
Gershome	1			
Glenview East	13			
Glenview West	25			
Kentley	36	1	16	19
Lisgar	16			
McQuesten East	10	4	5	1
McQuesten West	68	11	15	41
Parkview East	6			
Parkview West	16	5	9	2
Red Hill	36	20	9	7
Rosedale	44			
Saltfleet	33			
Trenholme	4			
Vincent	76	5	4	68
Valley areas	359			
Mountain	54			
Distance zones		56	71	288

* Distance zones listed only for those communities with a sample in each zone.

TABLE 2

CONTROL SAMPLE

<u>REGIONS</u>	<u>TOTAL SAMPLE</u>
1. East of Upper Ottawa Street	6
2. West of Upper Wellington Street	15
3. Between Upper Ottawa Street and Upper Wellington Street	53
4. West of Highway 403	14
5. West of James Street	22
6. West of Bay Street	18
7. East of James Street, west of Victoria Avenue and south of King Street	6
8. East to the study area	65

3. ANALYSIS

3.1 VARIABLES INCLUDED IN ANALYSIS AND RESEARCH HYPOTHESES

In the analysis, variables which were thought to be of the greatest importance were selected for testing. The chosen variables were then characterized as measures of awareness of the expressway issue and the proposed transportation route's perceived social impacts. The parameters of these variables were used in six ways to come up with what was hoped to be relevant results. The results appeared in the following forms:

1. Frequency tabulations of responses for the Red Hill Creek Valley study area
2. Responses by neighbourhood
3. Responses by distance zone
4. Responses by distance zones within neighbourhoods
5. Frequency tabulations for the telephone sample (control group)
6. Comparison of Red Hill Creek Valley study area and telephone responses

These mediums in which the responses appeared were selected with respect to the hypotheses stated below:

1. Awareness of the expressway issue will differ significantly by neighbourhood.
2. Familiarity of the six alternatives will differ significantly by neighbourhood.
3. Perceived need of a new North-South transportation route in East Hamilton will differ significantly by neighbourhood.
4. The perception that enough information has been released to the public about the expressway proposal will vary significantly by neighbourhood.
5. The alternative most preferred will vary significantly by neighbourhood.

6. Consideration of the Red Hill Creek Valley as an important natural resource will differ significantly by neighbourhood.
7. Propensity of moving if the transportation corridor is built will differ significantly by neighbourhood.
8. The ratings of the six alternatives will vary significantly by neighbourhood.
9. The second most preferred alternative will differ significantly by neighbourhood.
10. Expected neighbourhood impacts will vary significantly by neighbourhood.
11. Expected disturbance caused by noise levels will vary significantly by neighbourhood.
12. The closer to the proposed routes, the greater awareness of the expressway issue.
13. The closer to the proposed transportation routes, the greater the familiarity with the six alternatives.
14. The belief that there is a need for a new North-South transportation route in East Hamilton is related to distance from the Valley.
15. The perception that enough information has been released to the public will differ significantly by distance from the Valley.
16. The alternative which is most preferred will vary significantly by distance from the Valley.
17. Consideration of the Red Hill Creek Valley as an important natural resource will increase as the distance from the Valley decreases.
18. Expectations of moving if the route is built are inversely related to distance from the Valley.
19. Awareness of the expressway issue, varies inversely with distance from the Valley within neighbourhoods.
20. Familiarity of the six alternatives varies inversely with distance from the Valley within neighbourhoods.
21. Perception of a need for a new North-South transportation route in East Hamilton differs significantly with distance within neighbourhoods.

22. Propensity of moving if the route is built is inversely related to distance from the valley within neighbourhoods.
23. The ratings of the six alternatives will vary significantly by distance zone.
24. Expected neighbourhood impacts will vary significantly by distance zone.
25. Awareness of the roadway issue will differ significantly between the telephone sample and the study area sample.
26. Familiarity with the alternatives will differ significantly between the telephone sample and the study area sample.
27. Perception of a need for a new North-South transportation route in East Hamilton will differ significantly between the telephone sample and the study area sample.
28. The perception that enough information has been released to the public about the transportation corridor proposal will differ significantly between the control group and the study area.
29. Awareness of the roadway proposal will increase significantly with increasing education.
30. Perception of a need for a new north-south transportation route in East Hamilton will vary significantly with education levels.
31. The perception that enough information has been released to the public about the proposed expressway will vary significantly by education levels.
32. Familiarity with the alternatives will increase significantly with increasing education.

3.2. ANALYSIS PROCEDURES

Four methods of analysis were used in the study, namely: frequency tabulations, cross-tabulations, correlation analysis and analysis of variance.

Frequency tabulations were used to get a general feel of the

distribution of the responses for each question in the questionnaire. Furthermore, this procedure provided clues as to which variables should be further studied. Finally, it served as a check against any errors produced by incorrect punching of computer cards and/or any invalid data.

The second method of analysis implemented was cross-tabulations. This joint frequency distribution was statistically analyzed using the chi-square statistic to determine whether or not the variables were statistically independent. Cross-tabulations were utilized for responses dealing with awareness, need, familiarity with alternatives, information released to the public, most preferred alternative, the Valley as a natural resource and decision to move, by neighbourhood and distance zone. As well, cross-tabulation was used to examine neighbourhood impacts and ratings of the six alternatives by neighbourhood. All of the data was at least ordinal level and therefore met the requirements for cross tabulation. As well, to test the hypotheses involving education, cross tabulations were used.

Taking this analysis procedure a step further, it was applied to the data after having been broken down by the neighbourhoods which contained all three distance zones. Cross tabulations served the purpose of testing awareness of the corridor proposal, familiarity with the alternatives, perceived need of a new roadway and propensity to move by distance zone.

The third method of analysis used was the Pearson Correlation Coefficient. This procedure was used for two purposes, al-

though basically it measures the strength of a relationship between two interval-level variables... First of all, the Pearson Correlation Coefficient was utilized for testing the relationships between the ratings of the six alternatives and neighbourhood impacts with distance zones. Second, once the data had been broken down into the communities containing all three distance zones, the test was applied to the six alternatives as well as noise disturbance from the traffic on the proposed route in terms of the distance zones.

Analysis of variance was the final procedure used for analysis in this study. In this case, the Mann-Whitney U-test was used. This method enabled us to study the significant variations between the responses of the telephone control group. Of the six questions comprising the control question, four were used to look for significant differences between the responses of these two groups. Specifically these included: with the alternatives, whether or not there is a need for the proposed route and if enough information has been made available to the public.

3.3 RESULTS

3.3.1 FREQUENCY TABULATIONS OF RESPONSES FOR RED HILL CREEK VALLEY SAMPLE

The first variable to be examined was awareness. Almost 91% or 374 out of 413 respondents of the sample were aware of the proposed north-south transportation route. Sixty-one percent of the population had been informed by newspapers, constituting the largest response to the question dealing with by what medium(s)

the respondent had been informed (refer to table 3). Only 35.4% of the study area sample were familiar with the six alternatives selected by the regional municipality. People with higher levels of education were found to be more aware of the issue than those with less education. Of the people who were aware that each alternative follows the Red Hill Creek Valley at some point, 43.4% were extremely concerned about it. Twenty-seven people did not answer the question asking if there was a need for a new roadway, but 46.7% of the study area sample felt that the need existed. As far as the reference for a rapid transit route or a roadway was concerned, there was almost a perfect split (40.4% and 39.7% respectively). Over 52% of the people felt that not enough information about the expressway issue had been released to the public. Just over half (50.8%) of the people aware of the expressway issue have kept themselves informed. Only 42.6% of those aware of the situation knew of any community groups involved.

Turning to the rating of the alternatives, generally speaking it seems that the sample was not happy with the alternatives as a whole, (refer to table 4). Only 22% were in favour of alternative two, alternative three received a somewhat better rating with 27% in favour. In fact, alternative three, received the highest rating. Alternative four was accepted by 21% of the people followed by alternative ten. As with alternative two, people were in favour to some degree to alternative eleven. Finally, alternative fifteen got a favourable response for only 17.6% of the people who answered the question.

Just over 69% of the respondents indicated a preference for one of the alternative routes. The others who did not select one, disliked all of the routes, (refer to table 5). The alternative route most people preferred was alternative three with a response of 13.6%. Close behind were alternative ten and fifteen, despite the fact these two received the least favourable responses in the ratings. The least preferred alternative was number four, (8.4%). The alternatives most preferred by the people as a second preference were numbers eleven and three with 22.8% and 20.3% respectively. The respondents were asked to rate fourteen possible given effects they thought the proposed expressway route would have on their neighbourhoods. For the sake of brevity only those effects with definite trends will be mentioned here, the complete results are shown in Table #6. The study group expected property values would decrease, personal safety would drop, the visual appearance would be detracted, residents' neighbourhood satisfaction would decrease. The amount of open space and use of existing recreational areas, the neighbourhood image, character and quality would all diminish if the proposed transportation route were built. In turn, it was expected that noise levels would rise, property taxes increase, accessibility to jobs, shopping, entertainment, schools and recreation would improve, and people would be encouraged to move.

Looking at the usage of the Red Hill Creek Valley, 56% of the respondents use the valley in the summer. This figure drops

10% in the winter months. Walking/jogging, recreational sports, tobogganning and hiking represent the most frequent recreational uses of the area. Sixty-five percent of the users feel the proposed expressway will affect their family's use of the Red Hill Creek Valley. In response to the question asking if the parents knew if they used the valley to study nature, 31.2% knew that they did. A large percentage (68%) believed the Red Hill Creek Valley should be further developed as an area for recreation.

If the roadway is built through the valley, 80% and 46% of the respondents see air pollution and water pollution respectively as increasing (see table #7). On the other hand it is expected that the scenic value, plant life and animal and bird life will decrease by 68%, 79% and 83% of the sample respectively. As a result, 73% of our study group believe the Red Hill Creek Valley is an important natural resource.

Generally speaking, the respondents feel their privacy, the level of safety to them and their children and the use of their backyard will decrease when considering the effects of the proposed expressway, (see table #8). They also foresee the traffic as being disturbing, particularly truck traffic (see table #9).

Considering what appears to be detrimental effects of the proposed transportation corridor close to 300 of our respondents have not taken any action. By far the most frequent means of protest is the signing of a petition; done by more than a quarter of the sample. More than ten percent of the study group has also

attended a meeting.

Finally when asked if they would consider moving to another neighbourhood if the proposed expressway is constructed, 26% of the people said "yes".

3.3.2 RESPONSES BY NEIGHBOURHOOD

Thirty different relationships were tested for this section of the analysis. At a level of significance of .05, twenty-one pairs of variables were found to have significant relationships. First of all, the ratings of alternatives two (.0283), ten (.0112), eleven (.0172) and fifteen (.0186) when tested with neighbourhoods were found to be significant (see Table #4). Residents of Corman, Glenview East, and West, Kentley, McQuesten East and West, Parkview West, Red Hill, Rosedale, Saltfleet, and Vincent definitely opposed alternative two. The same communities with the inclusion of Lisgar were negative about alternatives ten and eleven. In the case of number eleven, the trend was not as distinct in Red Hill, Rosedale, and Saltfleet, though. Finally, the above-mentioned neighbourhoods, along with Trenholme, do not find alternative fifteen acceptable.

The first preference of possible routes when compared with neighbourhood was found to be significant (.000), as was the second preference (.0131). Corman, Glenview East and West, Kentley, McQuesten East, and West, Red Hill, Rosedale, Trenholme, and Vincent had more than their shares of people who did not think any of the alternatives should be constructed.

Alternative two was well accepted by the residents of Corman, Glenview East, Kentley, Lisgar, Parkview East, Saltfleet, and Tren-

holme. Kentley, McQuesten West and Vincent gave a positive response to alternative three, which was given good support across the board, but never unanimous approval. Parkview West, Red Hill and Rosedale gave their strongest support to alternative ten. McQuesten West and Vincent residents preferred alternative fifteen the most.

Number eleven the most popular alternative as a second preference, got a good response in Parkview West, Red Hill, Rosedale and Vincent. Selection of alternative three as a second preference was big in Corman, Kentley, Lisgar, and Saltfleet. Only the people in McQuesten West chose alternative two as their second preference.

Of the fourteen possible neighbourhood impacts, twelve were significantly related to the neighbourhood variable (property values, personal safety, property taxes, accessibility, visual appearance, residential satisfaction, amount of open space in neighbourhood, use of recreational areas, residential movement, neighbourhood image, neighbourhood character, and neighbourhood quality). Property values were expected to drop in Corman, Glenview East, Kentley, McQuesten East, and West, Parkview West, Red Hill, Rosedale, and Vincent. Changes in the value of land and houses were not expected in Glenview West, Lisgar, and Saltfleet. These three communities are all at least 400 metres away from the Valley routes.

The majority of the sixteen communities stated there would be no change in personal safety or it would decrease. In Corman, Glenview East and West, Lisgar, Rosedale, and Saltfleet no change

was foreseen. Different answers came out of Kentley, McQuesten West, Red Hill, and Trenholme where people thought safety would decrease. On the other hand, property taxes will increase, say some communities. McQuesten West, Rosedale and Vincent expect this to be the case. Others such as Glenview East and West, Parkview East and Red Hill expect no change in taxes.

As far as accessibility is concerned, only Saltfleet residents think it will improve. Every other community, except for Albion Falls, Gershome, and Trenholme (which had very small samples), thought there would be no difference in access to jobs, entertainment and shopping.

Eight communities responded that the roadway would be an eye-sore (Corman, Glenview East, Kentley, McQuesten West, Red Hill, Rosedale and Vincent). Five neighbourhoods replied that there would be no affect on the visual appearance of their areas.

Eight communities thought their residents' satisfaction would drop. Two communities on the mountain, Saltfleet and Lisgar, as well as Glenview West, believe they will still be satisfied. The same trend was illustrated by the possibility of the residential move variable. Results from the amount of open space in these neighbourhoods were basically similiar to the ones above, but they are also contingent on the amount of open space at present in the neighbourhood, for example Parkview West.

The last four impacts all show generally the same results as in the previous three variables. Again it was important to consider the present land-use distribution in each community. Several people in Saltfleet commented that no recreational facilities exist in

their neighbourhood, so obviously the amount of use will not change. As well, noise disturbance from traffic and truck traffic were found to be significant with neighbourhoods, .007 and .004 respectively. McQuesten West and East, Corman, and Red Hill residents perceive noise levels from the proposed route as being quite disturbing (on a scale of 0-not disturbing to 10-unbearably disturbing, the majority of the responses in these communities lay on the higher end of the scale). Truck noise was expected to be even more disturbing and four more neighbourhoods expressed the possibility of high disturbance from truck noise. Consideration of the Red Hill Creek Valley as an important natural resource is significantly related to neighbourhood (.0411). Thirteen of the sixteen communities consider the Red Hill Creek Valley an important natural resource. There was a split in Lisgar, Albion Falls and Gershome whose samples are too small to really consider. Lastly, consideration of a move to another neighbourhood is significantly related to the community (.0205). Eleven communities had large majorities of residents who said they would not move if the expressway was built. In Glenview East, McQuesten East and Red Hill there was a split. Again Albion Falls and Gershome cannot be included because of their small numbers.

3.3.3 RESPONSES BY DISTANCE ZONE

In this part of the analysis, twenty-nine pairs of variables were tested for significant relationships. Nineteen of the relationships were found to be significant.

To start with, need for an expressway was significantly related to distance (.0464) as was another awareness question, in-

formation released to the public (.0075). People living in the 200 - 400 metre range from the Valley felt there was more of a need than respondents from the other two zones. The same trend appeared for amount of information released. The sub-sample for the second zone had the largest of the three percentages of people who thought enough information had been released. The ratings of two alternatives, three (.023) and four (.027) were significantly related to distance. Both relationships were inverse. Moving away from the Red Hill Creek Valley, the ratings improved. Thirteen of the fourteen neighbourhood impacts were significant. All of them demonstrated inverse relations. These are the same as the ones for responses by neighbourhood with the exception of three variables. Added to the list are traffic in neighbourhood and noise levels, while personal safety is deleted. Again, noise disturbance as a result of traffic and truck traffic are significant. Finally, propensity to move is significantly related to distance from the valley. The likelihood of people moving to another neighbourhood decreases with distance from the Valley.

3.3.4 RESPONSE BY DISTANCE ZONE WITHIN NEIGHBOURHOODS

For this section, the only communities we are dealing with are Corman, Kentley, McQuesten East, McQuesten West, Parkview West, Red Hill and Vincent (see table 1). These neighbourhoods contain all three distance zones. The tests in at this point in the analysis deal with the neighbourhoods individually and not as an aggregate study group like before. For McQuesten West and Parkview West the results were insignificant. In other words, within each community the responses were not significantly different between distant zones.

In Kentley, familiarity with the alternatives was significantly related at a level of .0196. As distance from the valley increased people were less familiar with the alternatives. In this community, the results illustrate that as distance from the routes increases, the residents significantly expect traffic noise to be less disturbing.

In Red Hill need for a new roadway was significantly related to distance from the Red Hill Creek Valley (.0161). It is strange though that the zone where the greatest percentage of respondents believe there is a need is in the middle zone (200 - 400 metres). Alternative three received ratings which were significantly related to distance. Close to the Valley, this route was rated badly. Farther away it was highly rated. Two other significant relationships showed similar distributions. Noise disturbance and disturbance from trucks were perceived as worse possibilities close to the valley than at greater distances.

Three relationships were significant in Vincent. First off, the same occurrence for the need and distance variables as in Red Hill was exhibited in Vincent. The data in the first two zones was relatively much smaller this time though. Next, the same thing happened again this time for propensity to move and distance zone. Also found, was a significant relationship between the rating of alternative two and distance. A direct relationship was shown. As you approach the Valley the ratings of the route improved.

Truck noise disturbance inversely varied significantly with distance in Corman. The noise in the future was seen as being more disturbing close to the Valley.

Lastly, McQuesten East displayed a significant relationship be-

tween alternative four's ratings and distance. The two variables were strongly inverse.

3.3.5 FREQUENCY TABULATIONS FOR TELEPHONE SAMPLE

In the control group, 70% of the people were aware of the proposed corridor, but only 26% were familiar with the six alternatives selected by the region. 53% of the telephone sample thought there was a need for a new North-South transportation route in East Hamilton. Yet 56% of the group felt that inadequate information had been released to the public.

Only thirteen people (7.7%) had a preference about which alternative should be built. Nine selected number two.

3.3.6 COMPARISON OF RED HILL CREEK VALLEY AND TELEPHONE SAMPLE

The above results except for the last statistic were then compared with the study sample. Three of the four were found to differ significantly between the two groups. They are:

1. Awareness of issue - significance = .0000
2. Familiarity with alternatives - significance = .0021
3. Release of information - significance = .0019

The consensus about the need for the route in each group was not significantly different.

3.4 SUMMARY

To summarize it is best to recap in five separate areas: awareness, alternatives (ratings and preferences), neighbourhood impacts, usage of the valley and protest actions.

3.4.1 AWARENESS

There was a significant difference in the answers for the question "Are you aware of the proposed North-South Corridor Expressway?"

between the Red Hill Creek Valley sample and the telephone sample (91% awareness versus 70% respectively). There was significant difference between the two groups when it came to familiarity with the alternatives (35.4% for Valley groups and 26% for the rest of Hamilton). A significant difference didn't appear between the samples for the question asking whether there was a need or not for the expressway. 46.7% of the study area respondents did feel there was a need for a new North-South transportation route in East Hamilton, though.

The answers to whether enough information has been released were significantly different between the two samples. More than one half of the Valley group who answered the question were not happy with the amount of information released, while the percentage was 56% for the other sample. Just over half of the people around the valley, who were aware of the issue were keeping themselves informed. It was also found that the question of sufficient released information varied significantly with distance, as did whether there was a need for the roadway or not.

3.4 ALTERNATIVES: RATINGS AND PREFERENCES

As stated earlier, it seems the people were not satisfied with the range of alternatives. The highest percentage of people in favour of an alternative was 27% for number three. Alternative fifteen had the lowest popularity. Of all the people who answered the question, close to 70% of the respondents preferred one of the alternatives. The other 30% thought none of the alternatives should be built. In each of Corman, Glenview East and West, Kentley, McQuesten East and West, Red Hill, Rosedale,

Trenholme, and Vincent more than thirty percent of the respondents replied none of the alternatives should be constructed. Number three was preferred by the largest percentage of people (13.6). Alternatives ten and fifteen, were the second and third leading choices even though they received the least favourable responses in the ratings. Since they are distinct from the other routes, respondents who rated them high probably did not like the other four possibilities. On the other hand, more people did not give good ratings even for those two alternatives. This can be explained by the fact that routes two, three, four and eleven are basically comparable, thus a large majority had their preferences well distributed over four alternatives instead of two.

The alternatives picked most as a second preference were eleven and three.

3.4.3 NEIGHBOURHOOD IMPACTS

Twelve of the fourteen neighbourhood impacts were found to be significant by neighbourhood. Kentley, McQuesten West, Red Hill and Rosedale were the areas which most felt they would be adversely affected in terms of the neighbourhood impacts.

When the neighbourhood impacts were tested with the distance zones, thirteen of the relationships were significant.

The following list is an attempt to summarize which neighbourhood impacts will be more adverse and others which will have smaller changes.

TAELE 10

RANKING OF PERCEIVED CHANGES
IN NEIGHBOURHOOD IMPACTS

<u>NEIGHBOURHOOD IMPACTS</u>	(percentage)		<u>X-4</u> <u>(NET)</u>
	<u>X RATING</u> <u>(1-3)</u>	<u>4 RATING</u> <u>(5-7)</u>	
amount of open space	7.1	69.5	62.4
noise levels	12.3	74.0	61.7
residential move	10.1	63.1	53.0
property taxes	11.6	61.2	49.6
neighbourhood image	11.8	61.0	49.2
neighbourhood character	14.2	62.3	48.1
visual appearance	14.1	60.6	46.5
property value	15.4	61.3	45.9
resident's neighbourhood satisfaction	17.8	63.6	45.8
neighbourhood quality	14.1	52.3	38.2
use of recreational areas	16.8	50.0	34.2
personal safety	23.0	47.6	24.6
traffic on residential streets	26.8	40.4	13.6
accessibility	40.1	21.8	-18.3

The "X" column represents the percentage of the respondents who think that particular aspect of the neighbourhood will improve. The percentage of the sample who perceive a particular aspect as deteriorating will be listed in the "4" column. Finally, the "net" column offers the difference between the previous columns and provides a basis for ranking the neighbourhood impacts with respect to perceived change.

The last means of protest action is to leave the neighbourhood. In the study group, 108 people (26.2%) said they would sell their houses if the transportation route was built.

4. CONCLUSIONS

To conclude, it is best to reassert those research hypotheses stated earlier which are accepted in this report.

1. The alternative most preferred did vary significantly by neighbourhood.
2. Propensity of moving if the transportation corridor is built differed significantly by neighbourhood.
3. The ratings of alternative two, ten, eleven and fifteen varied significantly by neighbourhood.
4. The second most preferred alternative did differ significantly by neighbourhood.
5. Twelve of the 14 neighbourhood impacts varied significantly by neighbourhood.
6. Expected disturbance caused by perceived future noise levels from traffic and trucks did vary significantly by neighbourhood.
7. The belief that there is a need for a new North-South transportation route in East Hamilton was related to distance from the valley.
8. The perception that enough information has been released to the public differed significantly by distance from the valley.
9. The alternative which is most preferred varied significantly by distance from the valley.
10. Expectations of moving if the route is built were inversely related to distance from the valley.
11. Familiarity of the six alternatives varied inversely with distance from the valley in Kentley.
12. Perception of a need for a new North-South transportation route in East Hamilton differed significantly with distance in Red Hill and Vincent
13. Propensity of moving if the route is built was inversely related to distance from the valley in Vincent.
14. The ratings of alternatives three and four varied significantly by distance zone.

15. Thirteen expected neighbourhood impacts varied significantly by distance zone.
16. Awareness of the roadway issue was significantly different between the telephone sample and the study area sample.
17. Familiarity with the alternatives differed significantly between the telephone sample and the study area sample.
18. The perception that enough information has been released to the public about the transportation corridor proposal differed significantly between the control group and the study area.
19. Awareness of the roadway proposal increased significantly with increasing education.
20. Familiarity with the alternatives increased significantly with increasing education.

Finally, four things worthy of consideration:

1. Many respondents freely stated that the best way to become informed about the expressway issue is the door-to-door method which we used. The hope is that besides gathering data, we made people more aware about what is going on.
2. One of the open-ended parts of the questionnaire dealt with alternate ideas for the expressway. One of the respondents suggested making the Kenilworth Access and Highway 20 one-way accesses in opposite directions.
3. The responses to the question asking for preference of public transit or private transit were almost an even split. Perhaps rapid transit should be considered.
4. The interviewing had been completed before the new plans for the freeing up of agricultural land for industrial development in this area. Opinions as a result may have changed about the location of the proposed transportation route.

TABLE 3INFORMATION MEDIUMS

<u>SOURCE</u>	<u>NUMBER OF RESPONDENTS</u>	<u>PERCENTAGE OF RESPONSES</u>
Newspaper	253	61.3
Radio	123	29.8
T.V.	70	16.9
Community Newsletter	17	4.1
Open House	13	3.1
Neighbours	83	20.1
Other	95	23.0

TABLE 4RATINGS OF ALTERNATIVE ROUTES

		EXTREMELY IN FAVOUR			NEUTRAL		EXTREMELY OPPOSED	
		1	2	3	4	5	6	7
ALTERNATIVES								
* 2	Number	23	26	30	53	24	36	170
	Percentage (%)	6.4	7.2	8.3	14.6	6.6	9.9	47.0
3		31	39	29	46	19	35	164
		8.5	10.7	8.0	12.7	5.2	9.6	45.2
4		24	18	32	43	26	44	174
		6.6	5.0	8.9	11.9	7.2	12.2	48.2
* 10		17	26	30	55	34	44	155
		4.7	7.2	8.3	15.2	9.4	12.2	42.9
* 11		35	21	24	54	23	43	161
		9.7	5.8	6.6	15.0	6.4	11.9	44.6
* 15		22	11	31	47	21	38	193
		6.1	3.0	8.5	12.9	5.8	10.5	53.2

*Significant by neighbourhood

TABLE 5

PREFERENCE OF ALTERNATIVE ROUTES

ALTERNATIVES	PREFERENCE 1 (no. of respondents)		PREFERENCE 2 (no. of respondents)	
	Number	Percentage (%)	Number	Percentage (%)
2	36	10.0	35	17.3
3	49	13.6	41	20.3
4	30	8.4	18	8.9
10	47	13.1	33	16.3
11	39	10.9	46	22.8
15	47	13.1	16	7.9
None	111	30.9	13	6.4

TABLE 6

PERCEIVED NEIGHBOURHOOD IMPACTS

<u>NEIGHBOURHOOD IMPACTS</u>		GREATLY INCREASE		NEUTRAL			GREATLY DECREASE	
		1	2	3	4	5	6	7
traffic on residential streets	Number	38	25	43	130	48	43	69
	Percentage	9.6	6.3	10.9	32.8	12.1	10.9	17.4
* property values		12	22	26	91	49	71	119
		3.1	5.6	6.7	23.3	12.6	18.2	30.5
* personal safety		35	27	29	116	47	49	92
		8.9	6.8	7.3	29.4	11.9	12.4	23.2
* noise levels		17	19	14	56	61	73	167
		4.2	4.7	3.4	13.8	15.0	17.9	41.0
property taxes		15	11	16	98	78	51	92
		4.2	3.0	4.4	27.1	21.6	14.1	25.5
* accessibility		70	39	51	152	33	18	36
		17.5	9.8	12.8	38.1	8.3	4.5	9.0
* visual appearance		19	18	19	101	60	53	128
		4.8	4.5	4.8	25.4	15.1	13.3	32.2
* residents' neighbourhood satisfaction		26	20	25	74	55	63	135
		6.5	5.0	6.3	18.6	13.8	15.8	33.9
* open space		14	5	9	92	55	54	164
		3.6	1.3	2.3	23.4	14.0	13.7	41.7
* existing recreational areas		22	15	28	129	38	44	112
		5.7	3.9	7.2	33.2	9.8	11.3	28.9
* move		15	16	10	100	62	70	131
		3.7	4.0	2.5	24.8	15.3	17.3	32.4
* neighbourhood image		17	14	16	108	53	66	123
		4.3	3.5	4.0	27.2	13.4	16.6	31.0
* residential character of neighbourhood		14	16	26	93	48	60	138
		3.5	4.1	6.6	23.5	12.2	15.2	34.9
* neighbourhood quality		15	10	31	122	48	54	118
		3.8	2.5	7.8	30.7	12.1	13.6	29.6

* Significant perceived neighbourhood impacts.

TABLE 7PERCEIVED ENVIRONMENTAL IMPACTS

		GREATLY INCREASE			NEUTRAL			GREATLY DECREASE	DON'T KNOW
		1	2	3	4	5	6	7	8
<u>ENVIRONMENTAL IMPACTS</u>									
air pollution	Number	204	76	50	32	12	5	12	22
	Percentage	49.4	18.4	12.1	7.7	2.9	1.2	2.9	5.3
water pollution	Number	101	39	50	106	15	5	10	85
	Percentage	24.6	9.5	12.2	25.8	3.6	1.2	2.4	20.7
scenic value	Number	16	17	29	36	44	75	161	32
	Percentage	3.9	4.1	7.1	8.8	10.7	18.3	39.3	7.8
plant life	Number	9	5	9	38	48	88	188	26
	Percentage	2.2	1.2	2.2	9.2	11.7	21.4	45.7	6.3
animal and bird life	Number	8	4	4	28	39	84	219	26
	Percentage	1.9	1.0	1.0	6.8	9.5	20.4	53.2	6.3

TABLE 8PERCEIVED HOUSEHOLD IMPACTS

		GREATLY INCREASE			NEUTRAL			GREATLY DECREASE	
		1	2	3	4	5	6	7	
<u>HOUSEHOLD IMPACTS</u>									
privacy	Number	8	7	17	174	56	50	91	
	Percentage	2.0	1.7	4.2	43.2	13.9	12.4	22.6	
safety	Number	21	21	21	131	52	59	91	
	Percentage	5.2	5.2	5.2	32.4	13.9	12.4	22.6	
use of backyard	Number	28	18	18	202	27	35	62	
	Percentage	7.2	4.6	4.6	51.8	6.9	9.0	15.9	

TABLE 9EXPECTED NOISE LEVELS

<u>SOURCE</u>	NOT AT ALL DISTURBING										UNBEARABLY DISTURBING	
	0	1	2	3	4	5	6	7	8	9	10	
traffic	Number	33	19	18	40	31	53	31	40	53	24	68
	(%)	8.0	4.6	4.4	9.8	7.6	12.9	7.6	9.8	12.9	5.9	16.6
truck		31	6	18	21	17	27	21	55	49	50	116
traffic		7.5	1.5	4.4	5.1	4.1	6.6	5.1	13.4	11.9	12.2	28.2

APPENDIX A

ENVIRONMENTAL BACKGROUND LITERATURE

In order to design questions to deal with the issue of environmental impact, and also to become familiar with the situation, as much background literature as possible was gathered and reviewed.

The following is a brief chronological outline of the eleven pieces of literature reviewed in this study.

1. TITLE: Hamilton Region Conservation Report, 1968

AUTHOR AND SOURCE: Hamilton Region Conservation Authority

CONTENTS: This report is a basic resource inventory of the status of the Hamilton Mountain Watersheds. The report documents the condition of geology, soil, land uses, sensitive areas, wildlife, water courses and flood potential. The largest area covered is the Red Hill Creek watershed, since this creek drains most of Hamilton Mountain. The report's use is mainly for inventory purpose, although it concludes by stating some possible policies for the management of these resources and planning of land uses on the mountain.

2. TITLE: King's Forest Conservation Area Master Development Plan, 1970

AUTHOR: Hamilton Region Conservation Authority

SOURCE: Rosedale Community Association

CONTENTS: This report is a very brief development proposal for the King's Forest area between Albion Falls and the TH&B railway tracks to the north. The entire proposal by the Conservation Authority, was based on the premise that the City of Hamilton turn over control of King's Forest, which the city would not do.

3. TITLE: Eco-Inventory Report on the Environmental Appraisal of Halton and Wentworth Counties, 1971

AUTHORS: Hamilton Federation of Environmental Groups

SOURCE: Ecologistics Ltd., Kitchener

CONTENTS: This report is a general description of various

environmental aspects of Halton and Wentworth Counties under the following topics: air and water, leisure and recreation, urban and rural landscapes, and local agencies. The report is fairly detailed in places regarding chemical and physical analysis of environmental conditions. However it also stresses recommendations for environmental protection purposes.

4. TITLE: Mount Albion Conservation Area Resource Inventory, 1975

AUTHOR: A. Manning

SOURCE: Hamilton Region Conservation Authority

CONTENTS: This report focuses on the development of the existing Mount Albion Conservation Area south of Albion Falls. It is another resource inventory and land-use evaluation on a more detailed scale than the 1968 report. Included in the report is a map of the study area which clearly shows the development plans.

5. TITLE: Red Hill Creek Watershed Management Study, 1975

AUTHOR: M.M. Dillon Ltd., Consulting Engineers, Toronto

SOURCE: Hamilton Region Conservation Authority

CONTENTS: This report looks at watershed management of the Red Hill Creek as it applies to the future development of the Mount Albion Conservation Area. Since this particular property lies adjacent to the Upper Ottawa Street Sanitary Landfill site, the report actually deals with specific management techniques of a landfill site and leachate from it. Test results of three 1974 water samples are presented, along with explanations for the condition of the water. The report also covers the use and operation of a landfill site, descriptions of the visual aspects of the Ottawa Street site, and sections concerning corrective measures and future uses. The study firm used a common method called extrapolation to establish probable maximum flows and flood levels for the creek.

6. TITLE: Proposed Red Hill Creek Expressway Technical Report, 1973

AUTHORS: B.W. Vanderbrug and Frank Shaw

SOURCE: Hamilton Region Conservation Authority

CONTENTS: This report lists the Authority's environmental reasons for opposing an expressway and makes some general recommendations on transportation which are more in line with Authority policy.

7. TITLE: Red Hill Creek Flood Plain Mapping, 1975

AUTHOR: M.M. Dillon Ltd, Consulting Engineers, Toronto

SOURCE: Hamilton Region Conservation Authority

CONTENTS: This is a very technical report which outlines the boundaries of the flood plain along the entire Red Hill Creek using a set of flood plain maps. To determine the maximum expected flood levels, the design storm Hurricane Hazel was used and flood levels were calculated from the known downpour of that storm, when it is extrapolated over the watershed. The maps are based on 1972 topographical maps and show anticipated spill areas in the lower sections of the watershed. Calculations for backup floodwaters were carried out where culverts were too small to carry the maximum flow. In cases where this situation existed, it was recommended that the culverts be enlarged. The report also includes all the calculations for flood levels and peak flows down the length of the creek valley.

8. TITLE: Hamilton-Wentworth Region Environmentally Sensitive Areas Study, 1976

AUTHOR AND SOURCE: Ecologistics Ltd, Kitchener

CONTENTS: This report is a technical document detailing the significant sensitive areas of the Hamilton-Wentworth Region. The first section of the report details the criteria used to declare an area environmentally sensitive, namely: distinctive land formations, ecological function, presence of unusual or rare plant or animal communities or habitat, high biological diversity

size of land area, suitability for research and education and aesthetic value. Using these criteria, tracts of land in Hamilton-Wentworth of varying sizes were identified as environmentally sensitive and then each one was named and studied. Pertinent to Project R.E.D.'s research are area number 25, King's Forest and area number 30, Van Wagner's Marsh. Each study includes a general description, a map and a detailed description of the way in which the area fulfills the applicable criteria. In the case of rare plants or animals, a list of the species found in each area is added. Finally, each study contains a chart showing the probable negative impact to the area of various disturbance factors and makes suggestions for further study and management.

9. TITLE: Effects of the Upper Ottawa Street Landfill on Red Hill Creek

AUTHOR: Ministry of the Environment

SOURCE: McQuesten Community Association

CONTENTS: This report is a technical document which uses chemical sampling analysis of the Red Hill Creek at points above, at and below the landfill site to determine its effect on the water quality.

10. TITLE: Mountain East-West and North-South Corridor Study Phase I and Phase II

Natural Environmental Assessment Report

AUTHOR AND SOURCE: Ecologistics Ltd., Kitchener

CONTENTS: Phase I report uses six parameters of concern: hazard lands, ground water, geologic features, vegetation, wildlife and aquatic life to describe all the environmental constraint areas affected by the proposal. Then each area is described, stressing any particular attributes or sensitivities.

Phase II is a much more detailed environmental assessment of each of these areas. It uses the matrix method to analyse various effects of each different proposed expressway route (Alternatives 1 to 15) on each separate sensitive area. The parameters of concern outlined in Phase I are expanded and each is judged under the following headings: existing conditions, impacts, mitigation potential and extent.

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APPENDIX B

PART I INTRODUCTION

With the ever increasing demands of urbanization on our landscape, the retention and development of areas in the natural environment for recreational activities has become a vital concern of politicians and planners alike. As a consequence of an increasingly more mobile, more affluent and better educated population demands upon existing outdoor recreational facilities will increase in the future. Considered fortunate by any standard, Hamiltonians have long enjoyed the benefits of these recreational areas which are in most cases easily accessible to the citizens of this community. It is against this background that the present controversy concerning the development of an expressway through the Red Hill Valley has developed. The Red Hill Valley within the east end of Hamilton represents an important tract of natural vegetation in this section of the city. The Albion Falls area in the upper regions of the valley is a unique physiographic feature revealing the early geological history of the Niagara Escarpment in this area. The marshlands of the valley adjacent to the Queen Elizabeth Way are the nesting and breeding grounds for a number of wildfowl. Consequently the development of an expressway route through the area might have a long term impact on the local ecology. This section of the report will attempt therefore to examine the nature and extent of recreational facilities and activities within the Red Hill Creek Valley (R.H.C.V.).

PART 2 RECREATION AND THE COUNTRYSIDE

CLASSIFICATION OF RECREATIONAL FACILITIES

In order to make meaningful statements and comparisons regarding the many types of outdoor recreational areas and the activities performed therein, some form of classification is necessary. Although many schemes exist, a popular one was that introduced by Clawson Held and Stoddard based on the "space needs" of the recreational activity¹ (Table 1). Outdoor recreation can be conveniently divided into user-oriented and resource-based. User-oriented activities are catholic in nature i.e. not dependent to a great extent on a particular set of physical characteristics for their existence. At the other extreme resource-based activities are characterized by the availability of a specific natural feature and people are prepared to travel long distances to reach such areas.

ITEM	USER-ORIENTED	RESOURCE-BASED	INTERMEDIATE
LOCATION	CLOSE TO USERS ON AVAILABLE RESOURCES	WHERE OUTSTANDING RESOURCES CAN BE FOUND. MAY BE DISTANT FROM USERS	ON BEST RESOURCES AVAILABLE. NOT TOO DISTANT
TYPE OF ACTIVITY	GAMES-GOLF TENNIS, WALKING PICNICKING	MAJOR SIGHTSEEING, SCIENTIFIC, HISTORICAL INTEREST-MOUNTAIN- CLIMBING, FISHING HUNTING	CAMPING, HIKING HUNTING
WHEN MAJOR USE	AFTER HOURS (SCHOOL-WORK)	VACATIONS	DAY OUTINGS AND WEEKENDS
TYPICAL SIZE OF	1-100 ACRES AT MOST	GREATER THAN 1000 ACRES	100-1000 ACRES
RESPONSIBLE AGENCY	LOCAL OR CITY GOVERNMENT PRIVATE	NATIONAL PARKS AND FORESTS	PROVINCIAL OR PRIVATE PARKS

¹ CLAWSON, M., HELD, R. BURNELL, STODDARD, C.H. (1960). LAND FOR THE FUTURE, JOHN HOPKINS PRESS, BALTIMORE.

RECREATIONAL FACILITIES WITHIN THE R.H.C.V.

An examination of Figure 1 shows the proposed route the expressway would follow through the R.H.C.V. The figure also shows the major recreational areas and facilities existing within and adjacent to the valley. As can be seen the area would be termed user-oriented as most facilities (parks, pools and arenas) are near to the users. Also indicated on the map are several elementary as well as secondary schools within close proximity to the valley. The three major recreational centres: Sir Winston Churchill Sir Wilfred Laurier and the Rosedale Community Centre in the Kings Forest area have extensive programmes which utilize the resources of the valley (e.g. hiking, crafts, canoeing and related camping activities). As well as these activities, the valley is used for the traditional organized team sports of baseball, football, soccer and hockey. The largest and most often used section of the valley from the standpoint of recreation is the Kings Forest area. This municipal parkland is used during both summer and winter. Tennis, golf, swimming and the programmes at the Rosedale arena provide ample avenues for public participation. Downhill and cross-country skiing have become very popular winter activities within the past few years with the construction of tow-lifts and ski trails. In addition last winter saw the first of what should become an annual tradition- Winterfest 79 - a winter carnival held during February in the Kings Forest Park. An estimated 10,000 people participated in the week long festivities which included skiing, skating, dances and other assorted activities. Reaction to Winterfest 79 has been so favourable that organizers are already busy at work planning next years' programme. Two major golf courses exist within the R.H.C.V. - the Glendale Golf and Country Club and the Kings Forest Civic Golf Course off of Greenhill Avenue.

So far attention has been focussed upon recreational activities in which people actively participate. However there are a large number of people who use the valley for nothing more strenuous than an occasional walk through the many trails on a weekend afternoon. These more passive aspects of recreation are difficult to study because of their idffused and unorganized nature. It is because of this very widespread nature that such activities as

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